

Notice of Allowability

Application No.

10/827,462

Examiner

Dac V. Ha

Applicant(s)

MILLS ET AL.

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 07/20/07.
2. ☒ The allowed claim(s) is/are 1-23, renumbered as 1-23, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Dac V. Ha
Primary Examiner
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Allowable Subject Matter

1. Claims 1-23 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

Applicant has filed the Terminal Disclaimer in accordance with the office action dated 05/15/07. Upon further consideration, claims 1-23 are allowed. Prior art of record, taken individually or collectively, fails to fairly teach method and apparatus for receiving differential M-ary signal including "receiving a co-channel signal including a target-user differential M-ary signal and one or more interfering other-user differential M-ary signals; detecting at least one hopped feature per a predetermined time interval of the co-channel signal; constructing a trellis model for each user using detected hopped feature values as nodes; and determining soft-decision estimates of data bits included in the co-channel signal for each user, using the corresponding trellis model" in independent claim 1 (claims 2-10 depend therefrom); "an initial decoding module adapted to detect at least one hopped feature per a predetermined time interval of the co-channel signal, thereby enabling construction of a trellis model for each user using detected hopped feature values as nodes, and to determine soft-decision estimates of data bits included in the co-channel signal for each user, using the corresponding trellis model; and an interference cancellation and re-decoding module operatively coupled to the initial decoding module, and adapted to remove estimated contributions of the interfering other-user differential M-ary signals using multiuser detection (MUD) thereby providing an interference-cancelled signal, and to re-

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decode ambiguous data estimates remaining in the interference-cancelled signal" in independent claim 11 (claims 12-18 depend therefrom); and "decoding the co-channel signal based on a hopped feature associated with the co-channel signal, thereby providing soft-decision estimates of data bits included in the co-channel signal for each user; removing estimated contributions of the interfering other-user differential M-ary signals using multiuser detection (MUD), thereby providing an interference-cancelled signal; and re-decoding ambiguous data estimates remaining in the interference-cancelled signal" in independent claim 19 (claims 20-23 depend therefrom). Thus, claims 1-23 are found to be novel and unobvious over prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 4/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Dac V. Ha', with a long horizontal flourish extending to the right.

Dac V. Ha
Primary Examiner
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